

largely for the amusement of the students, at any rate, they do not appear as of any interest or value in agriculture, should be omitted in every case where the laboratory and the time of the class can be taken up by the subjects pertinent to the feeding of farm stock.

Miscellaneous Reading

AT EVENTIDE.

From "All The Year Round."

Search not those hands to me across the waste,
An old last friend, we lie between us rolls
An arm past where wonder sweeps soot,
That seek for all the shadow they have chased,
Whilst, sadly wandering, torn by breads and
tears.

and the masses of life's weary years.

Search out those hands, nor need all men which
lie
between my living form and thy dead heart.
Help me to play alone my native part,
Wherein I see naught of those clear bright skies
We wandered together, standing hand in hand,
To see the sun set deck the darkling land.

That time has come again, I stand alone,
The hills no more may glancing walking sight,
Save when between the darkness and the light
I close my eyes and think, then each grey stone,
Each central hollow, each fair light and shade
are mine, imprinted where time cannot fade.

Then why not come and sit beside the fire,
Make thyself known? I would not ask for more,
Would not even question of that darkness shore
Where I have lost thee, nor would I aspire
Forget within thy eyes, Let me but clasp
Thine hand in mine? I could not fear thy grasp,
Dear thou art dead, yet with that nevermore
I do not fear thee, for I know then it dead,
Cancer thou not feel this? Leave thy quiet bed,
And watch with me the drifts-wreath red born,
Just as thou didst of old. 'Tis even so,
What keeps thee from the friend's fireside?

I will not question more; methinks thou art here,
Learning by whisper of thy presence sweet
I will be still, perchance I'll hear thy test
Grace at my threshold, or thy whisper near,
I will be still, for death is dumb, is dumb!
They cannot speak, so I will tell thee none!

APRONS.

From a London Fashion Letter.

Aprons are in great vogue; from the useful protector favored by the housewife to the dainty, useless but decorative tea apron there is great variety. Most of the latter class of aprons hail from Paris, and bibs are "en regle." Choice of material is as wide as choice of shape. Some aprons are made of black, others entirely of white lace, and velvet is a prominent fabric, as also ribbon trimmings. Red velvet bordered with gold lace is used for aprons, and a lace pocket is added. No one wears plain black silk or satin aprons nowadays. If these materials are used they are plaited closely lengthwise, edged with black lace over white, and have pockets of the combined laces; but are frequently of material distinct from the rest of the apron. Pink, blue, and red satin aprons will sometimes have narrow low bibs made entirely of rows of narrow lace. The edges of such aprons are cut-in battlements, with a lace flounce beneath, and pockets of lace on one or both sides, as approved. Sometimes Swiss bodices are substituted for bibs, and I think them as a rule more becoming. Occasionally we see braces attached to bibs. The said braces may be of ribbon or, if preferred, of the foundation material. Some black velvet aprons have large sunflowers embroidered in gold thread. Again, we see black lace arranged over colored satins, apricot, cardinal, and many gold yellows looking specially well under lace. Chantilly lace is now considered more fashionable than Spanish. White silk aprons are pretty, cut with battlemented edge and falling-over lace, or a flounce of the same material edged with roses of gold braid the same braid outlining the battlements. White gauze aprons, edges bordered with white cock's feathers, are exceedingly pretty. Pockets are added to most. The size for ordinary aprons is a three-quarter square, set in very close gathers at the waist. Valenciennes lace is often requisitioned as a trimming, and appliques of velvet or white silk are much admired. For household wear Roman aprons, woven with patterns in artistic colors, are admirable. My readers may not be aware of the form of aprons so designated. It is an oblong piece of material, with fringed ends. Both sides are alike. A third portion of the apron is folded back, and then the creased part is gathered slightly or not at all, and arranged on a cord and tassels, or set into a band. I have sent some mark-

ed at 38. 11d., though full of color they are warranted to wash. By the addition of a dressy apron a simple toilet is converted into a dressy one. When there is no bib to this apron a hem of corresponding material is often added, and the toilet is at it were transformed as it were without being changed. I observed a very tasteful apron the other day which was of velvet brocade edged with jetted lace, and with this I must close my dissertation on modern aprons and the materials used in their construction.

A tasteful and novel way of utilizing the broad soft ribbons one sees everywhere is the following—Take a sufficient length of ribbon, pass it round the neck, securing it under the left ear, with bare brooch or lace pin, draw the ends back to the front and fasten with brooch, allow the remaining portion of ribbon to descend loosely over the bust, then turn the ends under and secure with safety or ordinary pins. By this means a modified bulging fichu is easily fashioned. I generally bring the ends of the ribbon so far as the sixth button on my bodice, but a more elongated fichu may suit a stouter figure better.

LEMINOUS JEWELS.

M. Gaston Trouve, the well-known electrician of Paris, has lately designed a series of ornaments for ladies' wear consisting of glass, colored and cut to imitate rubies, diamonds, etc., fitted in an envelope, surrounding a small incandescent lamp of low resistance. The light shines through the pieces of glass only, and gives them all the appearance of the stone they are intended to imitate. The lamp is fitted from a small battery, which is carried about the person. It is composed of three pairs of zinc carbon plates (two carbons to each zinc), or a larger number, according to the current required. These plates dip in a saturated solution of bichromate of potash, which is contained in an ebony cell with three compartments. The plates are fitted into a cover, which is kept securely down on top of the cell by two bands of India rubber passed around the whole. Finally, the battery is incased in two sheets of gutta percha, so as to prevent any leakage. A miniature switch is carried in the pocket or elsewhere, within reach, to which the battery and lamp wires are connected. The pressure of a finger on the arm of this switch makes or breaks communication with the lamp. The battery weighs (with six plates) 300 grammes, and will work about thirty minutes with a lamp of from two to three volts. A larger battery, to work a four or eight volt lamp, weighs 800 grammes.

THUNDERSTORMS.

In a lecture on "Thunderstorms," delivered recently by Professor P. G. Tait, the lecturer began by remarking that the meteorological effects of a thunderstorm were the extraordinary amount of vapor in the air, and the consequent immense fall of rain and hail. He said that to find out the amount of energy involved in changes of that kind was an interesting question. In considering it the results they arrived at were astounding. To evaporate a tenth of an inch of water on a square foot of ground required a power equal to one horse for half an hour, so that to condense one-tenth of an inch of water on a square mile they would require one million million horses working for the same time. They had then no difficulty in understanding how it was that hurricanes and typhoons could be produced by the amount of energy in the heat formed out of that small quantity of water in condensing from the vapors into the liquid form. Going on to speak of the three forms of lightning—forked, sheet, and globe—he said that forked lightning was simply the same thing, on an incomparably larger scale, as the sparks they got from an electrical machine; and that the "flash" was simply the air rendered incandescent by resistance to the passage of the electricity, in the same way as the carbon in the Swan lamp was rendered incandescent by a current of electricity being forced along it. A brilliant flash of lightning lasted, it was computed, only one-millionth part of a second. Experiments had been made which went to show that a bright object re-

quired to be seen for one-thousandth of a second before its full brightness was realised by the eye. It is lasted only half that time, it produced only half its brightness, and soon, consequently a flash of lightning was only seen at a hundred-thousandth part of its proper brightness. If a flash of lightning lasted the thousandth part of a second, objects would be as brilliantly illuminated by it as they were in the sunlight after it lasted one-tenth of a second it would have the brilliancy of 100 suns and would be blinding in its effects. Sheet lightning was merely the clouds and vapor in the air lighted up by a fork of flash, which itself was hidden from view; and as to the curious phenomenon known as globe lightning, they knew little about it, as they had never been and is able to produce it by experiments: had never been observed by any trained observer. Speaking next of thunder, he showed how it was caused by the sudden expansion of the air on all sides of the lightning flash, followed by an almost instantaneous rush of air when the flash had passed. Thunder, he said, was never heard more than fifteen miles off from the flash of lightning; and he remarked that the popular way of judging the distance of allowing a mile for every five seconds' interval between the flash and the thunder, was nearly correct. The old notion that there was something sulphurous connected with the discharge of electricity in the air had been discovered to be incorrect. The sulphurous smell had nothing whatever to do with sulphur, but with the great production of ozone, which was merely a modified form of oxygen. As to the peculiar marks which lightning often left on a human body it had struck, the old notion was that they were a sort of photograph of some tree or object in the neighborhood which had attracted the lightning. These were, however, caused by a disturbance in the nature of bruising of the small capillary vessels under the skin. Dealing next with the difficult question of the origin of electricity, Professor Tait remarked that the old idea that it was due to the friction of the air was untenable. A French investigator had suggested that every time water containing salt in solution was evaporated the vapor which came off was charged with electricity. That, said the lecturer, was probably not far from true, though it was not the whole truth. His own idea at present was that electricity was caused by the friction of the water vapor particles against the air particles, because when two different bodies were in contact they always gave off electricity.—"English Mechanic."

A SNAKE DANCE OF SAVAGES.

Captain S. G. Heaps describes in the "Albuquerque Journal" the origin of the Moqui Indians in New Mexico as follows:—Eight days before the time for the dances the men go to hunt for the snakes. They take with them the sacred meal and the sacred rod, a stick about 5 feet long with a fork at the end. They take every snake which they find, and put them into a hole in the ground about 10 feet deep and 8 feet wide and 15 feet long, and which is covered all over, except a round hole in the center. The dance ground is a smooth piece of ground about 16 feet in diameter, in the center of which is the sacred rock. On one side is the snake shade, a place about 4 feet square, with walls on three sides about 4 feet high and a curtain hung in front, in front of which is a flat board or stick. At a given signal eighteen men from the second estate quickly ascend the ladder and rush to the dance ground. The snake herders bring out the snakes and empty them into the snake shed, where they are kept by the herders with sticks. The eighteen men rush three times around the sacred rock, stopping each time in front of the snake shade and stamping three times on the board or timber in front of the snake shade. Eighteen women and eighteen maidens form a circle around the outside of the dance ring, each with a dish of the sacred meal. Eighteen other men rush out, each with a stick two feet long, on the end of which are three feathers tied. They wave them above the snake shade three times, each time making a loud hissing sound like the hissing of a serpent.

The first eighteen men then form a line, the right resting close to the shade, the other eighteen form in front of them. The curtain is quickly drawn aside, the border stirs up the snakes with a stick, all the women shout, the first man with the speed of lightning seizes a handful of snakes, grasps them with his right, the man opposite to him seizes him around the waist with one arm, with the other hand he waves the stick and feathers in the face of the snakes to attract them, the man with his mouth full of snakes rushes madly around the ring, supported by the other man as a partner, who is waving the stick and feathers all the time. As he passes the women each one throws the sacred meal on the snakes. Meanwhile each man is seizing a handful of snakes and putting them in his mouth. All being done in a moment, each one leaving his partner with the feathers and all rushing around, the snakes writhing in convulsions, the rattlesnake rattling, the copper-head and bull snakes hissing, the women shouting and throwing sacred meal—the whole forming one of the most terrible, horrible, and revolting and unearthly sounds and sights that a man ever beheld. They rush round the ring three times, when the snakes are dumped by the sacred rock. He says to say one man with five snakes in his mouth, one of the rattlesnakes caught one of the men by the neck. His partner seized it by the head and picked it back. Another caught a man by the side of the head and could hardly be jerked back. If the snakes are not all taken out of the snake shed another lot go through the same thing until all the snakes are carried three times around the ring. At the conclusion of the dance the eighteen maidens form a ring with the sacred meal, about six feet in diameter, the eighteen old women form two lines across the ring at right angles with the sacred meal; every man who can get one catches a snake, throws it into the ring, and the borders keep them there until the sun is just out of sight, when every man again rushes into the ring, seizes a snake, and all run as fast as they can towards the four points of the compass for half a mile, when they are propped and let go, and all return to the dancing ground, where they wave the sacred rod over the men who were bitten, chant, and invoke the snake god to save them. And so ends this frightful and horrible orgy. Of course those who are bitten die, but the only wonder is that so few are bitten, as many of the snakes are rattlesnakes.

THE WHALE FISHERY OF 1883.

The past year has been one of loss to those engaged in this business, and its results have been discouraging. The failure of the Arctic season, with small catches in other localities, has brought but small remuneration to those who risk their capital in the whale fishery. The fleet now numbers 425 vessels of all classes hailing from Atlantic ports, against 438 a year ago, and nineteen from San Francisco, against eight last year. The number of vessels engaged in sperm whaling has been considerably decreased owing to the low prices of oil, while, on account of the value of whale bone, agents are inclined to send most of their vessels to the Arctic Ocean and other right whale regions. Indications point to a steady decrease in the number of vessels sailing from Atlantic ports, and perhaps a small increase in the number sailing from San Francisco for the Arctic Ocean.

A new feature of the past year, arising from the increase of Arctic whaling at San Francisco, has been the establishment of extensive works at that place for the manufacture and sale of whale and sperm oil, thus enabling the owners there located, as well as others who import oil at that place, to find a market without paying the heavy cost of shipping the same to the Atlantic seaboard. It is understood that the whole Arctic catch of oil, about 10,000 barrels, has been purchased at San Francisco at increased prices. Their works, in addition to the large facilities for the manufacture of sperm candles, have a capacity of 150 barrels of oil per day, and are to be enlarged if the imports at that place and the sales of their product shall warrant.

Sperm whaling continues to decline, and no catches of any amount

were made during the year except a few in the Atlantic Ocean and two or three off Patagonia. The number of ships and boats now in that fishery at sea is forty-eight, most of which will follow right whaling during half of the year. The continued low price of oil will soon prevent the business being followed to any great extent. Right whaling has been unfortunate, and the season in the North Pacific, owing to prevalence of ice and bad weather, was a failure. Thirty-eight vessels cruised there, three of which were lost, and the remaining thirty-five averaged 274 barrels of oil and 4,350 pounds of whalebone to each. The southern right whalers were not as fortunate as in the previous year, and their general success was moderate.

The price of sperm oil, from ninety-six cents per gallon on Jan. 1, rose to \$1.05 in April and May, and from that time steadily declined, closing the year at 90 cents. Whale oil, from fifty-five cents in January, continued at about the same price, with the exception of a rise to 59½ cents in April, until December, when, on account of the demand at San Francisco, it advanced, closing the year at sixty cents per gallon. Whalebone opened the year at \$2 per pound for Arctic, and with a few variations steadily advanced, until at the close of the year it sold at \$4.75 per pound.

The purchases of sperm oil for consumption during the year have amounted to 32,200 barrels, the purchases of whale oil to 23,500 barrels, and of whalebone 376,000 pounds; all the above being bought at Atlantic ports, besides the purchases at San Francisco of all their imports, and quite an amount of oil and bone belonging to New Bedford vessels.

The import of sperm oil for 1884 is estimated at from 18,000 to 19,000 barrels, but that of whale oil and whalebone must depend on the success of the Arctic whaling fleet. The figures of imports for 1883 do not include the oil and bone purchased at San Francisco, it being difficult for us, at this distance, to obtain the information with accuracy.—[Manufacturer's Gazette.]

DEEP PLOUGHING.

(By Dr. Talmage.)

Deep ploughing for a soul. Deep ploughing for a soul. He who makes light of sin will never amount to anything in the church or in the world. If a man speaks of sin as though it were an inaccuracy or a mistake, instead of the loathsome, abominable, consuming, and damning thing that God hates, that man will never yield a harvest of usefulness. When I was a boy I ploughed a field with a team of spirited horses. I ploughed it very quickly. Once in a while I passed over some of the sod without turning it, but I did not jerk back the plough with its rattling devices. I thought it made no difference. After a while my father came along and said, "Why, this will never do; this isn't ploughed deep enough; there, you have missed this and you have missed that." And he ploughed it over again. The difficulty with a great many people is that they are only satisfied with conviction when the subsoil plough of God's truth ought to be put in up to the beam. My word is all to Sabbath-school teachers, to all parents, to all Christian workers—plough deep! Plough deep! And if in your own personal experience you are apt to take a lenient view of the sinful side of your nature, put down into your soul the ten commandments which reveal the holiness of God and that sharp and glittering couter will turn up your soul to the deepest depth. If a man preaches to you that you are only a little out of order by reason of sin, and that you need only a little fixing up, he deceives! You have suffered an appalling injury by reason of sin. There are quick poisons and slow poisons, but the druggist could give you one drop that would kill the body. And sin is like that drug; so virulent, so poisonous, so fatal that one drop is enough to kill the soul. Deep ploughing for a soul. Broken heart or no religion. Broken soil or no harvest. Why was it that David and the jailer and the publican and Paul made such ado about their sins? Had they lost their senses? No. The plough-share struck them. Conviction turned up a great many things that were forgotten. As a farmer ploughing sometimes turns up the skeleton of a man or the anatomy of a monster long ago buried, so the plough-share of conviction turns up the anatomy of the soul.